

# Overview

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This chapter describes the Enterprise Edition software features for Catalyst 1900 and Catalyst 2820 switches. It also describes the feature default settings and shows the management console main menu used to configure and manage your network.

For detailed descriptions of the hardware and baseline software features, refer to the installation and configuration guide for your switch, the *Catalyst 1900 Series Installation and Configuration Guide* or *Catalyst 2820 Series Installation and Configuration Guide*. For detailed descriptions of the command-line interface commands, refer to the *Catalyst 1900 Series and Catalyst 2820 Series Command Reference* (online only).

For menu-by-menu configuration and conceptual information about specific software features, such as virtual LANs (VLANs) and Fast EtherChannel, refer to the chapter documenting that feature.

## About the Catalyst 1900 and Catalyst 2820 Switches

The Catalyst 1900 and Catalyst 2820 switches are designed for Ethernet workgroups and individual users requiring dedicated 10-Mbps connectivity to the desktop and 100-Mbps connectivity to servers and backbones. These switches use shielded twisted-pair, unshielded twisted-pair (UTP), or fiber-optic cable. Table 1-1 and Table 1-2 describe the Catalyst 1900 and 2820 switch models.

Table 1-1 Catalyst 2820 Switch Models

Part Number	Description	Number of Addresses	Number of Ports	Number of Module Slots
WS-C2822-EN WS-C2822-A	Modular with 24 switched 10BaseT ports and 1 AUI port	2048	25	2
WS-C2828-EN WS-C2828-A	Modular with 24 switched 10BaseT ports and 1 AUI port	8192	25	2

Table 1-2 Catalyst 1900 Switch Models

Part Number	Description	Number of Addresses	Number of Ports
WS-C1924-EN WS-C1924-A	24 10BaseT ports, 1 AUI port, and 2 100BaseTX ports	1024	27
WS-C1924C-EN WS-C1924C-A WS-C1924F-A WS-C1924F-EN	24 10BaseT ports, 1 AUI port, 1 100BaseTX port, and 1 100BaseFX port 24 10BaseT ports 1 AUI port, and 2 100BaseFX ports	1024	27
WS-C1912-EN WS-C1912-A	12 10BaseT ports, 1 AUI port, and 2 100BaseTX ports	1024	15
WS-C1912C-EN WS-C1912C-A	12 10BaseT ports, 1 AUI port, 1 100BaseTX port, and 1 100BaseFX port	1024	15

**Note** Dash A (-A) models are switches with standard edition software. Dash EN (-EN) models are switches with standard and Enterprise Edition software.

## Accessing Supported MIBS

You can obtain a copy of the Catalyst 1900 and 2820 switch MIB files by using File Transfer Protocol (FTP) to access the ftp.cisco.com server. To obtain a MIB file, follow these steps:

- Step 1** Use FTP to access the server ftp.cisco.com, or enter www.ftp.cisco.com from your browser.
- Step 2** Log in with the username **anonymous**.
- Step 3** Enter your e-mail name when prompted for the password.
- Step 4** At the ftp> prompt, change directories to /pub/mibs/supportlists/wsc1900.
- Step 5** Use the command **get supportlist.html** or **get supportlist.txt** to get a list of the supported MIB files.
- Step 6** Copy supported MIB files from **/pub/mibs/v1**.

## Supported Software Features

Cisco Catalyst 1900 and 2820 Enterprise Edition Software supports these features:

- VLANs
- Fast EtherChannel feature
- Cisco's Uplink Fast Spanning-Tree Protocol feature
- Terminal Access Controller Access Control System Plus (TACACS+)
- Configuration File Upload and Download

## VLANs

A VLAN on a Catalyst 1900 or Catalyst 2820 switch is an administratively defined broadcast domain. Stations can receive only broadcast and multicast packets sent by other stations in the same VLAN. A VLAN enhances performance by limiting traffic; it allows the transmission of traffic among stations that belong to it and blocks traffic from other stations in other VLANs. Using the Enterprise Edition Software, you can configure from 1 to 1005 VLANs.

The VLAN feature consists of the following components:

VLAN trunks	Extends VLANs from one Catalyst 1900 or Catalyst 2820 switch to routers and switches that are VLAN-capable. The switches support a maximum of two trunks. The Catalyst 1900 switch supports a maximum of two Fast Ethernet Inter-Switch Link (ISL) trunks. The Catalyst 2820 switch supports both ISL and Asynchronous Transfer Mode (ATM) LAN emulation (LANE) trunk connections and ATM permanent virtual connections (PVCs).
Load sharing	Allows parallel trunks to split traffic on a VLAN-by-VLAN basis between multiple trunks.
VLAN Trunk Protocol	Allows VLAN naming consistency and connectivity between all devices in a management domain. When new VLANs are added to a Catalyst 1900 or Catalyst 2820 switch in a management domain, the VLAN Trunk Protocol (VTP) automatically distributes the information to all the devices in the management domain. VTP advertisements are transmitted on all trunk connections, including ISL, IEEE 802.10, and ATM LANE.
VTP pruning	Enhances network bandwidth use by reducing unnecessary flooded traffic, including broadcast, multicast, and flooded unicast packets. This feature restricts flooded traffic to only those trunk links that the traffic must use to access the appropriate network devices.
Static port VLAN membership	Manually assigns a port to a VLAN. You need to reconfigure the switch to change the VLAN assignment to a static port.
Dynamic port VLAN membership	Provides the flexibility to move a connection from a port on one switch to a port on another device in the network while retaining the VLAN identity of the host. You can assign dynamic ports to a VLAN based on the source MAC address of the hosts connected to that port.
Dynamic Inter-Switch Link (DISL) Protocol	Synchronizes the configuration of two interconnected Fast Ethernet interfaces to ensure that both interfaces are either in trunking or nontrunking mode.

## Fast EtherChannel Feature

Fast EtherChannel links provide parallel bandwidth of up to 400 Mbps (in full duplex mode) between a Catalyst 1900 or Catalyst 2820 switch and another switch or host by grouping two Fast Ethernet interfaces into a single logical transmission path.

## Uplink Fast

UplinkFast is an enhancement to the Spanning-Tree Protocol (STP) that provides fast convergence whenever STP picks a new root port. STP selects a new root port automatically when a link or switch fails or when STP parameters change.

## TACACS+

The TACACS+ protocol exchanges authentication information between a network device and a centralized database. TACACS+ allows a separate access server to provide authentication for access to the switch management console. TACACS+ is used in place of a locally configured password.

## Configuration File Upload and Download

You can use the Configuration File Upload and Download feature to specify switch configuration commands in an ASCII file that can be uploaded to or downloaded from a TFTP server.

When the switch powers up, it can retrieve its configuration from a TFTP server.

# Configuration and Management Interfaces

The management interface has both a menu console and a web console. Use the menu-driven system when you have a direct connection to the console port or a Telnet connection to the switch; use the web console for accessing the switch across the Internet. There is also a command-line interface (CLI) for entering switch commands directly at the command prompt.

Table 1-3 shows the default values for Enterprise Edition software features and the management interface you use to access them.

**Table 1-3      Default Settings and Their Configuration Utilities**

Feature	Default Setting	Configuration Utility
VLANs	VLAN 1 is the default Ethernet VLAN. All ports are nontrunk, static ports and belong to VLAN 1.	Virtual LAN menu or CLI
Fast EtherChannel	Off.	CLI
Uplink Fast	Disabled.	CLI, Switch Manager (STP), or Spanning Tree Configuration menu
TACACS+	Disabled.	CLI
Secret password	None	CLI
Configuration file upload and download	Disabled.	CLI

## CLI

The CLI is an Enterprise Edition software feature. All configuration and management options are supported through the CLI. This book lists the available CLI commands for each feature in the section detailing that feature. For detailed information on how to use the CLI, refer to the *Catalyst 1900 Series and Catalyst 2820 Series Command Reference* (online only).

## Menu System

The menu console contains options for basic configuration (as described in the switch installation guides) and for configuring VLANs. However, not all features can be accessed using its menus.

The management console menu-driven system uses the following conventions:

- Select a menu by entering the letter in square brackets that precedes the selection. The selected menu appears.
- Press Return after entering any parameters. When pressed at the beginning of a parameter entry, Return cancels the attempt, and the menu reappears.
- Use the Backspace key to erase the character previously entered. Press Backspace at the beginning of a parameter to clear the entry.
- Enter an **X** to return to the previous menu. Enter an **X** on the Main Menu to exit the management console and return to the command prompt.
- Menus display the current values used by the switch, except when parameters are activated as a group.
- Menu entries are not case sensitive, except when entered as a descriptive string that preserves case.

Refer to the *Catalyst 1900 Series Installation and Configuration Guide* and the *Catalyst 2820 Series Installation and Configuration Guide* for complete information about the menu console.

### User Interface Menu

This section discusses the User Interface Menu that is found in the lower portion of the Management Console Logon Screen.

```
Catalyst 2820 Management Console
Copyright (c) Cisco Systems, Inc. 1993-1999
All rights reserved.
Enterprise Edition Software
Ethernet address:      00-E0-1E-7E-B4-40
PCA Number: 73-2239-01
PCA Serial Number: SAD01200001
Model Number: WS-C2822-A
System Serial Number: FAA01200001
```

```
-----
      User Interface Menu
      [M] Menus
      [K] Command Line
      [I] IP Configuration
      [P] Password Configuration
```

Enter Selection:

Press the **[M] Menus** key to display the Main Menu. Press the **[K] Command Line** key to use the command-line interface (CLI). Press the **[I] IP Configuration** key to set the switch IP address. Press the **[P] Password Configuration** key to set the privileged Exec password.

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**Note** The **[I] IP Configuration** option is visible at this point *only* if no password is set. If a password is assigned, you are prompted for the correct password before you can set the switch IP address. Once the IP address is assigned, the **[I] IP Configuration** option does not appear.

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## Main Menu

This section shows the Management Console Main Menu. Press **[H] Help** to display the online help and to change the expertise level for online prompts. Press **[X] Exit Management Console** to exit the Management Console. When you press the **[X]** key, your Telnet session is ended, and you are logged out from the switch.

Catalyst 1900 - Main Menu

```
[C] Console Settings
[S] System
[N] Network Management
[P] Port Configuration
[A] Port Addressing
[D] Port Statistics Detail
[M] Monitoring
[V] Virtual LAN
[R] Multicast Registration
[F] Firmware
[I] RS-232 Interface
[U] Usage Summaries
[H] Help
[K] Command Line

[X] Exit Management Console
```

You will most often use the **[N] Network Management** and **[V] Virtual LAN** options to configure VLANs. When configuring modules, you will also use **[P] Port Configuration**.

If you have configured bridge groups on the switch, the menu option **[V] Virtual LAN** does not appear. The menu option **[B] Bridge Group** appears in its place.

If you have previously configured bridge groups on the switch and would like to start using VLANs, you must use menu option **[S] System Menu** to disable bridge group functionality. The switch then resets automatically, and the Main Menu displays the **[V] Virtual LAN** menu option.

### Web Console

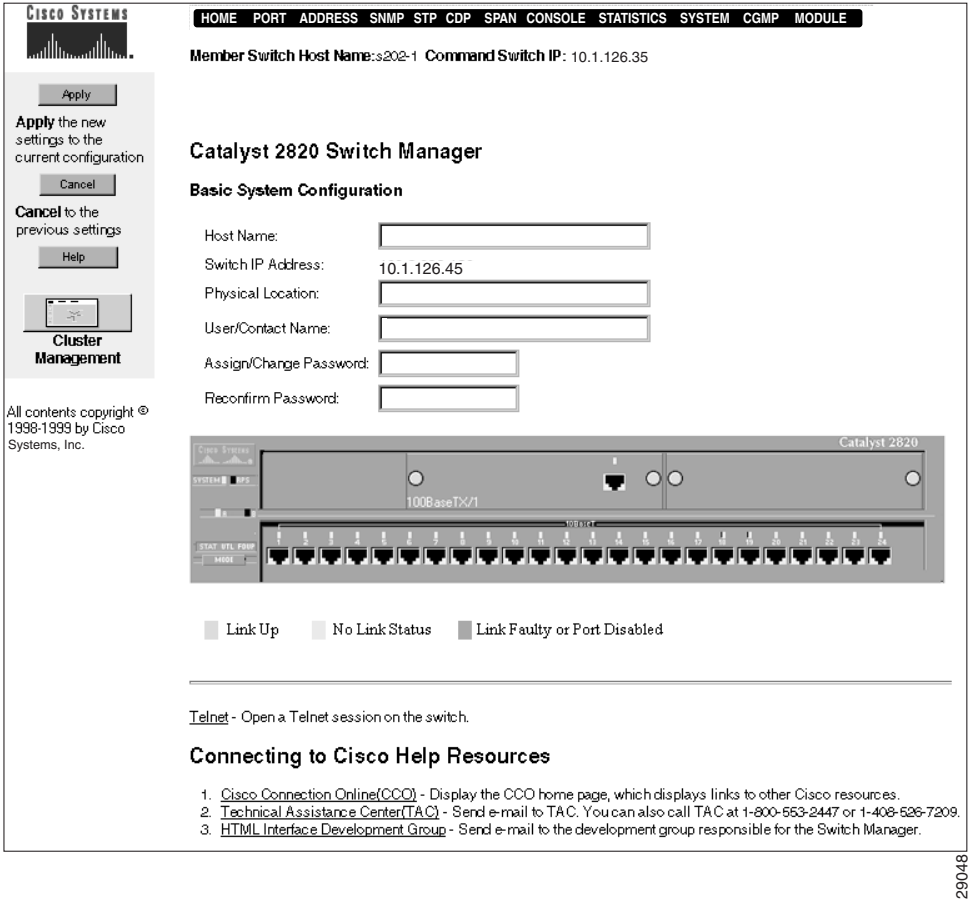
The Catalyst 1900 or Catalyst 2820 web console offers a convenient way to access the switch management interface across an Internet connection. Using the web console, you can set the parameters for the switch configuration.

The web console displays an action bar at the top of the display window. Using the buttons on the action bar, you can navigate through the web console pages, access additional menus, and change the operational parameters. Fast EtherChannel parameters are available from the Port Management Page, and the UpLink Fast parameters are accessed from the Spanning Tree Management Page. Complete information about the web console is documented in the *Catalyst 1900 Series Installation and Configuration Guide* and the *Catalyst 2820 Series Installation and Configuration Guide*.

Your PC must have an Internet browser installed and an IP address assigned to view the switch web console. For best results with the web console, one of the following browser versions is required:

- Netscape Communicator 4.5, 4.51, or 4.61
- Internet Explorer 4.01a or 5.0

Figure 1-1 Catalyst 2820 Web Console



The web console offers Telnet service for accessing the menu console and the switch CLI. If the switch has an IP address, when you click **Telnet**, the Menu Console Logon Screen displays. You can enter **[M] Menus** to access the Menu System or **[K] Command Line** to access the CLI.

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**Note** If the switch is a cluster member without its own IP address, you must first Telnet to the cluster commander, then issue the command **rcommand *n***, where *n* is the member number.

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The web console is fully documented in the *Catalyst 1900 Series Installation and Configuration Guide* and the *Catalyst 2820 Series Installation and Configuration Guide*.